

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

REC'D 15 MAY 2006


WIPO

PCT

Applicant's or agent's file reference p 03 099 wo	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/DK 03/00941	International filing date (day/month/year) 30.12.2003	Priority date (day/month/year) 30.12.2003
International Patent Classification (IPC) or both national classification and IPC INV. A23G3/30		
Applicant GUMLINK AS et al		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of 4 sheets.

- This report contains indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  24.06.2005	Date of completion of this report  15.05.2006
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Boddaert, P  Telephone No. +31 70 340-3471



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/DK 03/00941

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-42 as originally filed

**Claims, Numbers**

1-32 filed with telefax on 07.04.2006

**Drawings, Sheets**

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/DK 03/00941

---

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2-25,27-32
	No: Claims	1,26
Inventive step (IS)	Yes: Claims	
	No: Claims	1-32
Industrial applicability (IA)	Yes: Claims	1-32
	No: Claims	

2. Citations and explanations

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/DK 03/00941

**Re Item V**

Reference is made to the following documents :

D1 : EP0151344

D2 : US4161544

Remark : The terms 'about' and 'substantially' used throughout the description and the claims do not appear to have a precise meaning , contrary to Article 6 PCT. These unclear features have not been taken into account for assessing novelty.

1. The present application does not meet the requirements of Article 33(2) PCT because the subject-matter of claims 1,26 is not new.

a. Document D1 discloses (examples , claims) gum base granules comprising at least one biodegradable polymer (polysaccharides , corn syrup , maltodextrin) and a compressed chewing gum comprising the gum base. The gum base has an intrinsic water content of less than 5%.

The subject-matter of claims 1,26 is therefore not new.

b. Document D2 discloses (examples , claims) gum base granules comprising at least one biodegradable polymer (polysaccharides , starch) and a compressed chewing gum comprising the gum base coarse granules. The gum base has a moisture content of intrinsically less than 5%.

The subject-matter of claims 1,26 is therefore not new.

2. Dependent claims 2-25,27-32 do not contain any features which , in combination with the features of any claim to which they refer , meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT) , because in these claims a change is defined which comes within the scope of the customary practice followed by persons skilled in the art , especially as the advantages thus achieved can readily be foreseen.

Amended on 7 April 2006

### Patent Claims

1. Gum base granules comprising at least one biodegradable polymer wherein the  
5 gum base has a water content of less than 5.0% by weight of the gum base.
2. Gum base granules according to claim 1,  
wherein said gum base comprises substantially solely at least one biodegradable  
polymer.
- 10 3. Gum base granules according to claim 1 or 2,  
wherein at least one of said biodegradable polymers comprises a polyester produced  
through reaction of at least one alcohol or derivative thereof and at least one acid or  
derivative thereof.
- 15 4. Gum base granules according to any of the claims 1 to 3,  
wherein at least one of said biodegradable elastomers comprises said polyester  
obtained by polymerization of at least one cyclic ester.
- 20 5. Gum base granules according to any of the claims 1 to 4,  
wherein the gum base has a water content of less than 1.5% by weight of the gum  
base.
6. Gum base granules according to any of the claims 1 to 5,  
25 wherein the gum base has a water content of less than 1.0%, preferably substantially  
0% by weight of the gum base.
7. Gum base granules according to any of the claims 1 to 6,  
wherein the size of the gum base granules are within the range of 0.01mm · 0.01 mm  
30 to 2mm · 2mm, preferably within the range of 0.1mm · 0.1mm to 1.0 mm · 1.0mm.
8. Gum base granules according to any of the claims 1 to 7,

at least one biodegradable polymer in the amount of about 1% to about 100% by weight of the gum base.

9. Gum base granules according to any of the claims 1 to 8,  
5 wherein said granulated gum base comprising at least one high molecular weight elastomeric biodegradable polymer in an amount of about 0% to about 75% by weight of said gum base.

10. Gum base granules according to any of the claims 1 to 9,  
10 wherein the molecular weight of said at least one high molecular weight elastomeric biodegradable polymer is from about 10000 g/mol to 800000 g/mol Mn.

11. Gum base granules according to any of the claims 1 to 10,  
wherein said granulated gum base comprising at least one low molecular weight  
15 elastomer solvent in an amount of about 0% to about 90% by weight of said gum base.

12. Gum base granules according to any of the claims 1 to 11,  
wherein the molecular weight of said at least one low molecular weight elastomer  
20 solvent is from about 1000 g/mol to 50000 g/mol Mn.

13. Gum base granules according to any of the claims 1 to 12,  
wherein gum base granules comprises sweetener in an amount of less than 50% by weight.  
25

14. Gum base granules according to any of the claims 1 to 13,  
wherein the gum base is substantially free of lubricants, anti-adherents and glidants.

15. Gum base granules according to any of the claims 1 to 14,  
30 wherein the natural resins provide an improved and sticky texture of the gum base when applied in chewing gum formulation.

16. Gum base granules according to any of the claims 1 to 15,  
wherein said gum base is substantially wax free.

17. Gum base granules according to any of the claims 1 to 16,  
5 wherein said gum base is substantially fat free.

18. Gum base granules according to any of the claims 1 to 17,  
wherein said gum base comprises filler in an amount of about 0% to about 50% by  
weight of the gum base.

10

19. Gum base granules according to any of the claims 1 to 18,  
wherein said gum base granules comprise active ingredients, at least a part of said  
active ingredients been torn into the chewing gum forming granules or at least a part  
of the chewing gum forming granules previous to compression.

15

20. Gum base granules according to any of the claims 1 to 19,  
wherein said gum base comprises synthetic resin in an amount of about 15% to about  
99%, preferably about 15% to about 80% by weight of the gum base.

20 21. Gum base granules according to any of the claims 1 to 20,  
wherein said gum base comprises emulsifiers and/or fats in an amount of about 10%  
to about 40% by weight of the gum base.

22. Gum base granules according to any of the claims 1 to 21,  
25 wherein said gum base comprises wax in an amount of about 2% to about 30% by  
weight of the gum base.

23. Gum base granules according to any of the claims 1 to 22,  
wherein at least a part of the flavoring agents has been torn into the gum base or at  
30 least a part of the gum base previous to compression.

24. Gum base granules according to any of the claims 1 to 23,

wherein said at least one biodegradable polymer comprises at least one polyester obtained by polymerization of at least one compound selected from the group consisting of cyclic esters, alcohols or derivatives thereof and carboxylic acids or derivatives thereof.

5

25. Gum base granules according to any of the claims 1 to 24,  
wherein said gum base granules comprise at least one non-biodegradable polymer.

10

26. Compressed chewing gum comprising gum base according to any of the claims 1  
to 25 wherein the water content is less than 5.0% by weight of the gum base.

27. Compressed chewing gum according to claim 26,  
wherein at least a part of said chewing gum polymers are non-biodegradable.

15

28. Compressed chewing gum according to claim 26 or 27,  
wherein said chewing gum granules are blended and compressed together with  
chewing gum ingredients, preferably powdered chewing gum ingredients, such as  
sweetener, flavor, fillers and emulsifiers.

20

29. Compressed chewing gum according to any of the claims 26 to 28,  
wherein the water content is less than 1.5% by weight of the gum base.

30. Compressed chewing gum according to any of the claims 26 to 28,  
wherein the water content is substantially 0%.

25

31. Compressed chewing gum according to any of the claims 26 to 30,  
wherein said biodegradable gum base comprises at least two biodegradable  
polymers.

30

32. Compressed chewing gum according to any of the claims 26 to 31,  
wherein said biodegradable gum base granules are used together with conventional  
non-biodegradable gum base granules.